

Appln. No. 10/056,831

Amdt. dated December 8, 2004

Reply to Office action of Sept. 9, 2004

Amendments to the Claims:

1. (Currently Amended) A trocar having an axis and being adapted to provide access for a surgical instrument across a body wall and into a body cavity, comprising:

5 a cannula disposed along the axis and having a proximal end and a distal end, the cannula being adapted for disposition across the body wall;

a housing disposed along the axis at the proximal end of the cannula, the housing having a housing wall adapted to receive the surgical instrument generally along the axis and to introduce the surgical instrument into the cannula; and

10 a valve disposed in the housing and having properties for forming a first seal with the housing wall and a second seal with the surgical instrument when the surgical instrument is present in the trocar and a third seal when the surgical instrument is absent from the trocar;

15 a gel material inserted in the valve and having floating or off-axis movement properties for maintaining relative to the axis and to maintain the second seal even when the surgical instrument is inserted or moved laterally from the axis ~~of the trocar~~.

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2. (Previously Presented) The trocar recited in Claim 1, wherein the gel material of the valve has a maximum outer dimension measured laterally from the axis and a thickness measured along the axis, the ratio of the maximum outer dimensions to the thickness being in a range between one and five.

3. (Previously Presented) The trocar recited in Claim 2, wherein the thickness is in a range between about five to ten millimeters.

4. (Previously Presented) The trocar recited in Claim 1, further comprising:
means defining at least one cavity adjacent the gel material, the cavity providing a void into which the gel material can move.

5. (Previously Presented) The trocar recited in Claim 4, wherein the cavity defining means includes a portion of the housing wall.

6. (Previously Presented) The trocar recited in Claim 4, wherein the cavity defining means includes a portion of the gel material.

7. (Currently Amended) A trocar having an axis and being adapted to provide access for a surgical instrument across a body wall and into a body cavity, comprising:

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a cannula disposed along the axis and having a proximal end and a distal end,

5 the cannula being adapted for disposition across the body wall;

a housing disposed along the axis at the proximal end of the cannula, the housing having a housing wall adapted to receive the surgical instrument generally along the axis and to introduce the surgical instrument into the cannula;

a septum valve disposed in the valve housing and adapted to form a first seal
10 with the instrument when the instrument is received into the trocar;

a valve support disposed between the septum valve and the housing to float the septum valve laterally from the axis of the trocar, the valve support including a gel material having properties for moving relative to the axis and having elongation greater than 1000 percent to facilitate maintenance of the first seal during off-axis insertion or
15 movement of the instrument relative to the housing.

8. (Previously Presented) The trocar recited in Claim 7, wherein the valve support forms a second seal with the housing wall.

9. (Previously Presented) The trocar recited in Claim 8, wherein the housing includes:

a first wall disposed generally parallel to the axis of the trocar, and

a second wall disposed generally perpendicular to the axis of the trocar.

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10. (Previously Presented) The trocar recited in Claim 9, wherein the valve support forms the second seal with the first walls of the housing.

11. (Previously Presented) The trocar recited in Claim 9, wherein the valve support forms the second seal with the second walls of the housing.

12. (Previously Presented) The trocar recited in Claim 7, wherein the septum valve is insert molded to the valve support.

13. (Currently Amended) A trocar having an axis and being adapted to provide access for a surgical instrument across a body wall and into a body cavity, comprising:

a cannula having a tubular configuration and extending between a proximal end

5 and a distal end;

a valve housing disposed at the proximal end of the cannula;

a valve disposed in the valve housing along the axis, the valve being adapted to form a seal with the instrument when the instrument is inserted through the valve housing and into the cannula; and

10 portions of the valve including a gel material having properties for floating or moving off-axis relative to the axis of the trocar to maintain the seal with the instrument when the instrument is inserted or moved laterally from the axis of the trocar.

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14. (Previously Presented) The trocar recited in Claim 13, wherein the properties of the gel material include an elongation of 1000 percent.
15. (Previously Presented) The trocar recited in Claim 13, further comprising:
means defining a void in proximity to the gel material to facilitate movement of the gel material relative to the axis.
16. (Previously Presented) The trocar recited in Claim 15, wherein the void defining means includes portions of the seal housing.
17. (Previously Presented) The trocar recited in Claim 15, wherein the void defining means includes portions of the gel material in the form of air pockets within the gel material.